

INTRODUCTION.

GEOGRAPHICAL POSITION, AREA, AND CLIMATE.

Victoria is situated at the south-eastern extremity of the Australian continent, of which it occupies about a thirty-fourth part, and it contains about 87,884 square miles, or 56,245,760 acres. The following islands are included in its territory:—Phillip, French, Churchill and Elizabeth islands in Western Port Bay; Snake, Little Snake and Sunday islands at Corner Inlet; and Lady Julia Percy island off the coast near Port Fairy. The areas in acres of these islands are—Phillip, 24,320; French, 42,000; Churchill, 140; Elizabeth, 64; Snake, 11,500; Little Snake, 1,240; Sunday, 2,640; and Lady Julia Percy, 650. Victoria is bounded on the north and north-east by New South Wales, from which it is separated by the River Murray, and by a straight line running in a south-easterly direction from a place near the head-waters of that stream, called The Springs, on Forest Hill, to Cape Howe. On the west it is bounded by South Australia, the dividing line being about 242 geographical miles in length, approximating to the position of the 141st meridian of east longitude, and extending from the River Murray to the sea. On the south and south-east its shores are washed by the Southern Ocean, Bass Strait, and the Pacific Ocean. It lies between the 34th and 39th parallels of south latitude and the 141st and 150th meridians of east longitude. Its extreme length from east to west is about 420 miles, its greatest breadth about 250 miles, and its extent of coast-line 980 miles, including the length around Port Phillip Bay 164 miles, Western Port 90 miles, and Corner Inlet 50 miles. Great Britain, exclusive of the islands in the British Seas, contains 88,756 square miles, and is therefore slightly larger than Victoria.

The southernmost point in Victoria, and in the whole of the Australian continent, is Wilson's Promontory, which lies in latitude 39 deg. 8 min. S., longitude 146 deg. 26 min. E.; the northernmost point is the place where the western boundary of the State meets the Murray, latitude 34 deg. 2 min. S., longitude 140 deg. 58 min. E.; the point furthest east is Cape Howe, situated in latitude 37 deg. 31 min. S., longitude 149 deg. 59 min. E.; the most westerly point is the line of the whole western frontier, which lies upon the meridian 140 deg. 58 min. E., and extends from latitude 34 deg. 2 min. S. to latitude 38 deg. 4 min. S., a distance of 242 miles.

Climate. From its geographical position, Victoria enjoys a climate more suitable to the European constitution than any other State upon the Continent of Australia. In the seventy-seven years ended with 1932 the maximum temperature in the shade recorded at the Melbourne Observatory and the Weather Bureau was 111·2 deg. Fahr., on the 14th January, 1862; the minimum was 27 deg., on the 21st July, 1869; and the mean was 58·4 deg. Upon the average, on only four days during the year does the thermometer rise above 100 deg. in the shade, and on nineteen days the temperature reaches 90 deg. or over; generally, on about two nights during the year it falls below freezing point. Sultry nights are of rare occurrence. It is only occasionally that a high minimum is recorded. The minimum reading approximates to 70 deg. on an average on only two nights in any one year. The maximum temperature in the sun ever recorded (i.e., since 1859) was 178·5 deg., on the 14th January, 1862. The mean atmospheric pressure noted, first at the Observatory 91 feet above the sea level, and later at the Weather Bureau 115 feet above sea level, was, during the seventy-five years ended with 1932, 30·012 inches; the average number of days on which rain fell each year was 139, and the average yearly rainfall was 25·61 inches. The mean relative humidity of the atmosphere is 64 per cent.; on very warm days it is often 12 per cent., and it has been as low as 2 per cent. The severity of the heat is not felt so much as it would be if there were a relatively high wet bulb, as the temperature by such bulb seldom exceeds 75 deg. The average number of hours of sunshine daily is 6·2, and fogs occur, on an average, on only 20 days in the year.

MOUNTAINS AND HILLS, RIVERS AND LAKES.

Mountains and Hills. The highest mountain in Victoria is Mount Bogong,* situated in the county of the same name, 6,509 feet above the sea-level; the next highest peaks are—Mount Feathertop, 6,306 feet; Mount Nelson, 6,170 feet; Mount Fainter, 6,160 feet; Mount Hotham, 6,100 feet; Mount McKay, 6,030 feet; and Mount Cope, 6,027 feet; all situated in the same county; also the Cobboras, 6,030 feet, situated between the counties of Benambra and Tambo. These, so far as is known, are the only peaks which exceed 6,000 feet in height; but, according to a list which appears in the *Year-Book* for 1915-16, there are 39 peaks between 5,000 and 6,000 feet high, and 40 between 4,000 and 5,000 feet high; it is known, moreover, that there are many peaks rising to upwards of 4,000 feet above the level of the sea whose actual heights have not yet been determined.

* The highest mountain on the Australian Continent is Mount Kosciusko, in New South Wales, one peak of which is 7,328 feet high.

Rivers With the exception of the Yarra, on the banks of which the metropolis is situated; the Murray; the Goulburn, which empties itself into the Murray about eight miles to the eastward of Echuca; and the La Trobe and the Mitchell, with, perhaps, a few other of the Gippsland streams, the rivers of Victoria are not navigable. They, however, drain the watershed of large areas of country, and many of the streams are used as feeders to permanent reservoirs for irrigation and water supply purposes. The Murray, which forms the northern boundary of the State, is the largest river in Australia. Its total length is 1,520 miles, for 1,200 of which it flows along the Victorian border. Several of the rivers in the north-western portion of the State have no outlet, but are gradually lost in the absorbent tertiary flat country through which they pass.

Lakes. Victoria contains numerous salt and fresh-water lakes and lagoons; but many of these are nothing more than swamps during dry seasons. Some of them are craters of extinct volcanoes. Lake Corangamite, the largest inland lake in Victoria, covers 90 square miles, and is quite salt, notwithstanding that it receives the flood waters of several fresh-water streams. It has no visible outlet. Lake Colac, only a few miles distant from Lake Corangamite, is a beautiful sheet of water, $10\frac{1}{2}$ square miles in extent, and quite fresh. The Gippsland lakes—Victoria, King, and Reeve—are situated close to the coast, and are separated from the sea by only a narrow belt of sand. Lake Wellington, the largest of the Gippsland lakes, lies to the westward of Lakes Victoria and King, and is united to the first-named by a narrow channel. South-east of Geelong is Lake Connewarre, which is connected with the sea at Point Flinders.

A list of mountains and hills, rivers and lakes in Victoria appears in the *Victorian Year-Book* for 1915-16. This was compiled by the late Surveyor-General, Mr. A. B. Lang, and contains information in regard to heights, lengths, and areas respectively.

FLORA OF VICTORIA.

An article on the "Flora of Victoria," by Mr. J. W. Audas, F.L.S., F.R.M.S. (National Herbarium, Melbourne), appeared in the *Year-Book*, 1927-28, on pages 3 to 19, and addenda thereto appeared in the *Year-Books* of 1928-29, 1929-30, and 1931-32.

FURTHER ADDENDUM TO THE ABOVE ARTICLE.

Added to the List of Victorian Flora.

Thelymitra Holmesii, W. H. Nicholls (Orchidaceae).

EXOTICS.

Fifteen plants have been recorded as naturalized in Victoria during 1932-33, viz. :—

Sclerochloa dura Beauv, "Hard Meadow Grass" (Gramineae).

Polypogon lutosus Hitchcock, "Perennial Beard Grass" (Gramineae).

Agrostis palustris Hudson, "Red-top Grass" (Gramineae).

Agrostis tenuis Vasey, "Brown-top Grass" (Gramineae).

Brachiaria distachya (L) A. Camus, "Two-finger Grass" (Gramineae).

Aloe arborescens Mill., "Tree Aloe" (Liliaceae).

Allium sphaerocephalum L., "Round-headed Onion" (Liliaceae).

Carduus tenuiflorus Curtis, "Slender Thistle" (Compositae).

Centaurea paniculata L., "Purplish Cornflower" (Compositae).

Crataegus monogyna Jacq., "White Hawthorn" (Rosaceae).

Lythrum flexuosum Lag., "Wiry Loosestrife" (Lythraeae).

Medicago confinis Koch, "Tubercle Burr-Medick" (Leguminosae).

Trifolium suffocatum L., "Suffocated Clover" (Leguminosae).

Trifolium Bocconi Savi, "Boccone's Clover" (Leguminosae).

Rumex luxurians L., "Elegant or Luxuriant Dock" (Polygonaceae).

NOXIOUS WEEDS.

Additional List of Plants proclaimed under the *Vermin and Noxious Weeds Act 1922* (No. 3195) for the whole of the State of Victoria :—

Scientific Name.	Common Name.	Gazetted.
<i>Solanum rostratum</i> Dun. ..	Buffalo Burr	22.4.31
<i>Salvia Verbenaca</i> L. ..	Wild Sage	16.11.32
<i>Marrubium vulgare</i> L. ..	Common Horehound ..	14.12.32
<i>Onopordium Illyricum</i> L. ..	Illyrian Thistle	29.3.33

PHYSICAL GEOGRAPHY AND GEOLOGY OF VICTORIA.

An article on the "Physical Geography and Geology of Victoria," by Mr. W. Baragwanath, Director of Victorian Geological Survey, appeared in the *Year-Book* for 1927-28 on pages 20 to 30, and addenda thereto appeared in each subsequent issue of the *Year-Book*.

THE FAUNA OF VICTORIA.

An article on the "Fauna of Victoria," by the late T. S. Hall, M.A., D.Sc. (University of Melbourne), and Mr. J. A. Kershaw, F.Z.S., Curator of the National Museum, Melbourne, appeared in the *Year-Book* for 1916-17, and addenda thereto by Mr. Kershaw in the *Year-Books* for 1918-19 and 1920-21. Additional notes on this subject by Mr. D. Mahony, M.Sc., Director of the National Museum, Melbourne, were published in the *Year-Book* for 1931-32.

The following article on "The Mammals of Victoria" has been contributed by Mr. C. W. Brazenor, National Museum of Victoria.

INTRODUCTION.

From the viewpoint of zoology, Australia is a land of primitives. The Australian continent has long been separated from other land masses, and at the time of its severance it was populated with primitive stocks which have persisted, unchanged fundamentally, to the present day except for the arrival of winged creatures—to which wide seas are no deterrent—and a few forms of life which have reached the continent on natural driftwood rafts. This cannot be better exemplified than by the mammals.

Mammals may be defined as warm-blooded, vertebrate creatures, usually covered with hair, which suckle their young. From the mammary or milk glands the great class *Mammalia* takes its name.

This class is divided into three sub-classes :—

1. *Ornithodelphia*, or *Prototheria* ; egg-laying mammals.
2. *Didelphia* or *Metatheria* ; pouched mammals.
3. *Monodelphia* or *Eutheria* ; placental or higher mammals.

The fundamental differences between the sub-classes lies in the reproductive organs. *Ornithodelphians* have no placenta and, though possessing the mammalian diaphragm and mammary glands, they lay eggs. *Didelphians* are born while in an early embryonic stage, and in the pouch of the mother they develop to the stage at which the higher mammals are born.

Australia, New Guinea and adjacent islands, and Tasmania are the only places where all three sub-classes now survive.

No mammal, except *Gymnobelideus*, is confined to Victoria. The terms common, rare, and extinct apply only to the present position in our own State.

ORNITHODELPHIA (ORDER MONOTREMATA).

Monotremes are the most primitive mammals existing to-day, and their skeletal structure, as well as their egg-laying habit, is reminiscent of reptiles. Though they have, through the ages, become specialized, basically they remain living relics of the distant past when the mammals were evolving from reptiles. The mammary glands are without nipples, milk for the nourishment of the young being expressed through minute ducts in the skin. There are only two kinds (families) of monotremes, and, thanks to rigid protection, both are fairly common in Victoria.

The Echidna, *Tachyglossus aculeata* (Shaw), commonly though wrongly called Anteater, Porcupine, or Hedgehog, is very fond of rough, rocky country, and like most Australian mammals is essentially nocturnal. Its long snout and spine-covered body are too well known to need detailed description. The Echidna lays one egg. At the beginning of the breeding season the female develops a rudimentary pouch, little more than a depression, in the abdominal region, and in this the egg is brooded. The principal diet consists of ants, which are gathered up by the long, mucous-covered tongue, and are drawn into the animal's remarkably small mouth, situated at the extreme end of the snout.

The Platypus, *Ornithorhynchus anatinus* (Shaw), sometimes called the Duckbill or Watermole, is also a familiar animal. It has a flattened body covered with dense brown fur, a broad duck-like bill, webbed feet, and a paddle-like tail. Its form is obviously adapted to life in the water. It inhabits many rivers and creeks in Victoria, including the Yarra River near Melbourne. Preferring the banks of deep pools, it makes a burrow, sometimes 40 feet in length, which twists and winds a foot or so below the surface. The female excavates a large nesting chamber, and lines it with leaves and grass; in this she lays her eggs. On both entry and exit she closes the burrow with earth. Generally two eggs are laid, each a little over half an inch in diameter; the leathery shell resembles that of eggs of many reptiles, and the two eggs are often conjoined. On emerging, the young are almost shapeless, pink, grub-like creatures, less than half an inch long, and they remain in the nest until covered with fur and able to fend for themselves. The food of the Platypus consists chiefly of small fresh water crustaceans, insect larvae, and small molluscs.

DIDELPHIA (ORDER MARSUPIALIA).

The marsupials include many diverse forms of animals, some living in trees, some on the surface, and some below the surface of the ground. All, however, possess a pouch. In some the pouch is well developed, in others rudimentary; but it is always present. That firmly-rooted fallacy, that young marsupials grow from the nipple of the female, is disproved by simple dissection. The embryo, born in the normal

mammalian manner, is placed in the pouch by its mother where it attaches itself to a nipple, which then distends until the attached creature cannot be removed without injury. This difficulty of removing the young gave rise to the fallacy.

Marsupials are divided into two groups :—

1. *Diprotodontia*, or herbivorous section, which have teeth adapted for feeding on grass, leaves, &c.
2. *Polyprotodontia*, or carnivorous section, which have teeth adapted for feeding on a flesh and insectivorous diet.

HERBIVOROUS SECTION.

1. *Saltatory Herbivorous Animals.*

Kangaroos and wallabies (Family Macropodidae) are herbivorous marsupials specialized for a modified bipedal, hopping gait. The hind limb is greatly developed, and the hind foot elongated, but the fore limbs are small. The tail, long, thick, and tapering, serves as a balance when the animal leaps and as a support when it is at rest. The well-formed pouch opens towards the head of the animal.

The Red Kangaroo, *Macropus rufous* (Desm.), is the largest of the genus, and may stand more than six feet high when erect. Essentially an animal of the open plain, it is slender and graceful. It has short thick fur. The colour of the male is earthy red on the dorsal surface, white or grey on chest and throat; the female has no red coloration, but is of that smoky hue known as "blue." Some doubt exists as to whether it still survives in Victoria, but the series of skins in the National Museum prove that it was formerly taken in some numbers, and stragglers still occasionally enter the State. The species differs from the Grey Kangaroo in having a naked rhinarium (tip of nose between nostrils).

The Grey Kangaroo, *M. giganteus* (Zimm.), is the common kangaroo of Victoria which, only last year (1932), caused much trouble to farmers by destroying crops. It almost equals the Red Kangaroo in size, but both sexes are greyish-brown and the rhinarium is clothed with hair. It is gregarious and is usually to be found in "mobs" of up to 40 animals. Its home is the open forest, though it comes at night to the flats for food.

The Black-faced or Mallee Kangaroo, *M. melanops* Gould, inhabits north-west Victoria. It is more lightly built than the Grey Kangaroo, and its back is a rich deep brown, almost chocolate, in colour. A solitary animal, seldom seen in more than pairs, it lives in scrub or thick grass. This species is considered by some authorities to be a variety of the preceding.

The Black-tailed Wallaby, *M. ualabatus* (Less. & Garn.), the common wallaby of Victoria, is a coarse-furred, dark greyish-brown animal, with a black tail which is slightly crested towards the tip. Standing erect it is about two and a half feet. It frequents scrubby country, where its well-defined "runs" traverse almost impenetrable thickets.

The Red-necked Wallaby, *M. ruficollis* (Desm.), is uncommon, though still found in south-western Victoria. Smaller and lighter in colour than *ualabatus* it is distinctly rufous on the nape of the neck. Much of the thick timber it formerly inhabited has been destroyed by settlement.

The Rufous-bellied Wallaby, *M. billiardieri* (Desm.), the Paddy-melon of bushmen, was once common, but has not been recorded for some years. Possibly it may survive in swampy country in the extreme eastern coastal district.

The Rock-wallabies (genus *Petrogale*) are specialized for life in rough, rocky, country. The hind foot is heavy and the pads roughened, and the tail is long and does not taper. The only Victorian representative of the genus, the Brush-tailed Rock-wallaby, *P. penicillata* (Gray), is now very rare. Its distinguishing features are a black stripe behind the shoulder, and a long, bushy tail.

The Brown Hare-wallaby, *Lagorchestes leporoides* (Gould), which once inhabited the extreme north-west of Victoria, has not been seen for many years.

The Rat-kangaroos are the smallest of *Macropodidae*, the largest Victorian species being not bigger than a rabbit.

The Rufous Rat-kangaroo, *Aepyprymnus rufescens* (Gray), was once common in the north-eastern district, and may survive in more inaccessible parts. It is reddish-brown and is remarkably fast.

The Jerboa Rat-kangaroo, *Bettongia cuniculus* (Ogil.), is no longer to be found in Victoria.

The Dark Rat-kangaroo, *Potorous tridactylus* (Kerr), though very uncommon, still persists. Dark brownish-grey (almost black) in colour, with a rather long and pointed nose and a tail little more than half the length of its body, it is the least kangaroo-like animal of the family. It survives in the north-eastern district, in the Grampians, and probably in the Otway Ranges.

2. Arboreal Herbivorous Animals.

The Phalangers (family Phalangeridae), or Australian Opossums, include those herbivorous marsupials which are adapted to life in tree-tops. Some have a lateral flying membrane, extending from wrist to ankle, by means of which they volplane from the top of one tree to the base of another. All have a well-formed pouch.

The Silver-Grey or Long-eared Opossum, *Trichosurus vulpecula* (Kerr), is common even in parks adjacent to Melbourne. Like most of the family it spends the daylight hours in hollow trees, and is active at night. Its natural food consists of young shoots of the Eucalypts, but it will eat fruit, flowers (particularly rose petals), and even some green vegetables.

The Mountain or Short-eared Opossum, *T. caninus* (Ogilby), is found only in the mountain ranges. Larger and more densely furred than the typical Silver-grey, it is darker and has much shorter ears.

The Ring-tail Opossum, *Pseudochirus laniginosus* (Gould), is smaller and has softer, more woolly fur. It is greyish-brown in general colour, usually with a suffusion of rufous on the fore and hind limbs. The tail is long and tapering, with a conspicuous white tip two to four inches in length. The Ring-tail is common in scrubby forest country, principally at low altitudes. The female builds a large globular nest of twigs and leaves. Except in breeding season, however, it usually lives in hollows in trees.

The Flying Phalangers, often wrongly called Flying Squirrels, have the lateral skin flap before mentioned. They have long and, usually, bushy tails, which are not prehensile.

The Greater Flying Phalanger, *Petauroides volans* (Kerr), is as big as a cat. It is usually black on the dorsal surface and white below, but is subject to considerable variation. The long tail (longer than its head and body) is more bushy at the base than at the tip. In heavily timbered country it is not rare, though seldom seen. The Blue Gum is its favorite domicile, though it does not eat the leaves of this tree, but prefers above all else the tender shoots of the Narrow-leaved Peppermint (*E. amygdalina*).

The Yellow-bellied Flying Phalanger, *Petaurus australis* Shaw, is a rare animal found in the mountainous parts of eastern Victoria. It is almost as large as the Greater Flying Phalanger; the upper side of the body and flying membrane is a yellowish-grey with a black dorsal stripe, the under side a golden yellow. The fore and hind feet and the lower part of the limbs are black, and the tail is long and very bushy. The animal appears to feed largely on eucalypt blossoms.

The Squirrel Flying Phalanger, *P. sciureus* (Shaw), also rare, is not more than half the size of the last species. Its soft, silky, pale grey fur, boldly marked on the mid-dorsal line with a black stripe, and its pure white underside, combined with a very full tail, make it, perhaps, the most beautiful Victorian mammal. Its tail tapers slightly towards the tip.

The lesser Flying Phalanger, Flying Squirrel or Sugar Squirrel, *P. breviceps* Waterh., is very similar to the last-mentioned species, but its fur is shorter and less silky and its underside is grey. It is commonly found in open forest throughout the State. Both this and the last-named species are nectar feeders, but they largely supplement their diet with insects.

The Pigmy Flying Phalanger, *Acrobates pygmaeus* (Shaw), a tiny creature no larger than a mouse, is brown on the dorsal surface and white below. Its tail has lateral fringes of hair, giving it a feather-like appearance (hence the popular name "Feathertail") and this peculiar appendage assists the little animal in its parachute flights. All the Flying Phalangers are nocturnal, and make nests of leaves in hollow trees.

Leadbeater's Opossum, *Gymnobelideus leadbeateri* McCoy, is peculiar to Victoria, and only five specimens have ever been taken. In colour, size, and appearance, it is very similar to the Lesser Flying Phalanger except that it has no flying membrane and the tail is more bushy at the tip than at the base. Nothing is known of its habits.

The Dormouse Phalanger or Mouse Opossum, *Dromicia nana* (Desm.), is the only marsupial that truly hibernates. During the cold weather this small creature, no larger than a mouse, curls up in its nest in a hollow limb and remains dormant. During the summer it becomes very fat, the tail, as well as the body, swelling to almost unhealthy-looking proportions. From this store of fat the animal derives its nourishment when in a dormant state. It is very fond of the flowers of native shrubs and trees, and also devours insects with avidity. It is silver-grey above, white beneath.

The Koala or Native Bear, *Phascolarctus cinereus* (Goldfuss), is placed in a sub-family (Phascolarctinae) of its own. It is too well known to need general description. It is an example of over-specialization, having become so adapted to life in the tree tops that it is more or less helpless on the ground. Once very common, it is now rare in its truly wild state, though it is holding its own in sanctuaries. It will feed only upon a few species of Eucalypt, preferring Manna Gum (*E. viminalis*), but it will also take Peppermint (*E. amygdalina*) and Giant Gum (*E. regnans*); but rather than eat unpalatable food it will starve to death. It never enters a hollow, but spends the whole of its existence among the branches of trees.

3. Burrowing Herbivorous Animals.

Wombats form the only genus of this family (Phascolomyidae). These animals construct a burrow of 12 or more feet in length.

The Naked-nosed Wombat, *Phascolomys mitchelli* Owen, the only Victorian representative of the genus, is common in the western part of the State. It is a coarse-furred, thickly-built animal, with a short, blunt head, and varies in colour from fawn-grey to black. Wombats are principally root-feeding creatures, though they also eat grass and certain kinds of fungi.

CARNIVOROUS SECTION.

The Native Cats, Phascogales, and Pouched Mice (family Dasyuridae) comprise the truly carnivorous marsupials. The pouch is generally rudimentary and opens ventrally.

The Tiger Cat, *Dasyurus maculatus* (Kerr), was thought to be extinct in Victoria, but several specimens have recently been captured. It is the largest of the genus, being about the size of a small terrier dog. The dorsal surface of the body is dark-brown, almost black, spotted freely with round white spots. The under-side is white. The long tail is also spotted. This animal lives in thick forest amid the tangled undergrowth. It is very ferocious.

The Native Cat, *D. viverrinus* (Shaw), is smaller and its tail is not spotted. There are two colour forms, olive-grey and black. Though more numerous than the Tiger Cat, to which it is similar in habits, this species, also, is uncommon. It was once very abundant.

Geoffroy's Native Cat, *D. geoffroyi* Gould, has been recorded from Northern Victoria, but there is little doubt that it has now disappeared.

The Brush-tailed Phascogale, *Phascogale penicillata* (Shaw), often called Tree Rat, is a silvery-grey, wiry-haired animal about the size of a large rat. It has a pointed nose and short ears. The basal half of the tail is short haired, but the distal half is clothed with long black hairs which the animal can erect when frightened or annoyed. Living in forest country, it makes its home in hollow trees, and feeds upon small mammals, birds, and insects.

The Yellow-footed Phascogale, *P. flavipes* Waterh., is a terrestrial form, though it will make a nest in an old stump, or in a hollow at the base of a dead tree. It is about half the size of the Brush-tail, and is greyish-brown above, usually tending to ochraceous on the sides of the body; the under-side is buffy-yellow. The appearance of the fur is crisp.

Swainson's Phascogale, *P. swainsoni* Waterh., closely resembles the last-named species. Its fur is softer and is usually suffused with a deep rufous tint. It is a terrestrial form and does not climb trees. Though both species will eat meat, their diet consists principally of insects. Both are found in forest country.

The Fat-tailed Pouched Mouse, *Sminthopsis crassicaudata* (Gould), lives on the plains. It is about the size and colour of a common house mouse, but like all the Phascogales has a pointed nose and many sharp pointed teeth. The tail is short and more or less swollen according to abundance of food supply. In winter it makes a nest of grass among stones, but in summer usually forsakes this domicile for a crack in the ground.

The Common Pouched Mouse, *S. murina* (Waterh.), has rather a misleading name, for it is not nearly as common in Victoria as the above species, which it resembles in colour and size, but it has a long, slender tail and is even more mouse-like in appearance. Specimens are desired by the National Museum, Melbourne. Both species live entirely on insects.

The Bandicoots and Rabbit-bandicoots (family Peramelidae) are not entirely carnivorous, taking roots and bulbs as well as meat, insects, earthworms, etc. The pouch is not entirely enclosed, the ventral opening being towards the posterior end.

The Rabbit-bandicoot, *Thalacomys lagotis* (Reid), is now extinct in Victoria.

The Short-nosed Bandicoot, *Isodon obesulus* (Shaw), is a compact, short-legged little animal, somewhat larger than a rat. Although called "Short-nosed" its muzzle is long, though less so than the following species. The tail is short and the hair on the body is coarse and spiny. The upper surface is grizzled yellowish-brown, and the under surface yellowish-white. This is the commonest species in Victoria, and is found in numbers quite close to Melbourne. It feeds upon insects and their larvae and earthworms, and will also eat roots and bulbs. It makes its home among the roots of trees, or by scratching a depression under clumps of grass or low bushes. The species may be identified by its short, rounded ears.

The Long-nosed Bandicoot, *Perameles nasuta* Geoff., is very similar in appearance and habits to the foregoing animal. It is usually a little darker in colour, and its nose is longer. The ears are long and pointed at the tips.

Gunn's Bandicoot, *Perameles gunni* Gray, is similar in build, but has soft fur without spines. It is yellowish-brown on the upper surface, with four vertical stripes on each flank. The under surface is white.

MONODELPHIA.

The placental mammals form the bulk of the mammals of the world. Though the Victorian species are comparatively few, it is a great mistake to imagine that there are no placental mammals indigenous to Australia, for in this State are Bats, Rodents, Seals, and Whales, as well as the Dingo, concerning whose advent to the continent there has been much discussion. It is, perhaps, advisable to deal with them under two headings:—

- (a) Those indigenous to the country.
- (b) Those introduced in comparatively recent years.

INDIGENOUS PLACENTAL MAMMALS.

Bats (order Chiroptera).

Bats are the only mammals which have the power of true flight. The bones of the fore limbs are elongated, especially the phalanges or fingers which form the framework of the wings. The open wing of a bat may be likened to a spread hand, the fingers of which are connected by a strong thin membrane.

The Grey-headed Fruit Bat or Flying Fox, *Pteropus poliocephalus* Temm., the only Victorian representative of the fruit-bats, has a wing-spread of over 3 feet. It is easily recognized by its large size. It lives in huge colonies of thousands of individuals, is nocturnal, and feeds principally upon fruit.

The Yellow-bellied Bat, *Saccolaimus flaviventris* (Peters), is, like the remainder of the bats, insectivorous. It is not common. The body is a very deep brown (black) above and pure white below. The wing-spread is about 14 inches.

The Long-eared Bat, *Nyctophilus geoffroyi* Leach, has long ears and a nose-leaf on its muzzle. It is brown in colour and is a little smaller than the preceding animal.

The Little Bat, *Eptesicus pumilis* (Gray), is the smallest of the Victorian bats, the wing-spread being less than 9 inches.

Gould's Bat, *Chalinolobus gouldi* (Gray), has short ears, the lobe of which is carried forward below the angle of the mouth, which is thickened and has an outward projection. The bat is brown, has a black head, and a wing-spread of about 12 inches.

The White-striped Bat, *Nyctinomus australis* (Gray), has a white stripe on each side of the body directly under the wing. It is a little larger than the foregoing animal.

Seals (Order Carnivora : Sub-order Pinnipedia).

The Australian Sea-bear, *Arctocephalus doriferus* Wood Jones, lives in considerable numbers at Seal Rocks, off Westernport Bay and at Julia Percy Island. When wet this seal appears almost black, but a dry skin is grey on the dorsal surface and brown below. Statements concerning the destruction of fish by these animals are often made. They probably do very little damage to fishing grounds, their principal food being squid and other creatures of no commercial value. In South Australia the disappearance of the seals has caused no increase in the numbers of fish caught.

The Leopard Seal, *Ogmorhinus leptonyx* de Blainville, which is spotted, and the Crab-eating seal, *Lobodon carcinophagus* Homb. & Jaq., which is mottled brown in summer and white in winter, are occasional visitors from antarctic waters.

Rats and Mice (Order Rodentia).

Indigenous rats and mice are an interesting group, and some show considerable specialization. Unfortunately, many have been exterminated by introduced species.

The Golden-bellied Water Rat, *Hydromys chrysogaster* Geoff., is a large rat, reddish-brown on the dorsal surface, yellowish below, and the last 3 inches of the black tail is shining white. The head and body are about 12 inches in length. It is found in many streams and rivers in Victoria, and lives upon fish, crustaceans, and molluscs.

The Allied Rat, *Rattus assimilis* (Gould), is very common in unsettled areas. It must not be confused with the introduced Black Rat (see introduced animals). It is a short, stumpy little animal with long and almost fluffy fur, greyish-brown on the back, and a lighter grey below. Its tail is not quite as long as the head and body.

The Eastern Swamp-rat, *R. lutreola* (Gray), is very similar in appearance to *R. assimilis*, but is slightly smaller and has a shorter tail. It is found in swampy country and is not as common.

Mitchell's Jerboa Mouse, *Notomys mitchelli* (Ogil.), is a saltatory form with the hind limb greatly developed and the feet elongated; it is tawny with a white under-surface. It has now disappeared from its former habitat, the northern Mallee, but a greyer sub-species, *N. mitchelli macropus* Thos., may still exist.

Whales and Dolphins (Order Cetacea).

Cetaceans are rovers of the sea with a very wide distribution, but specimens are from time to time washed ashore. They are true mammals, with modified fore limbs and relics of a pelvic girdle. They are divided into two sub-orders, one toothless when adult, the other possessing teeth at all ages.

Toothless or Whalebone Whales (Sub-order *Mystacoceti*).

The Hump-back Whale, *Megaptera nodosa* Bonn., is black above and white below, and has a number of longitudinal furrows on the lower jaw and throat. Length to more than 50 feet.

Toothed Whales (Sub-order *Odontoceti*).

The Beaked Whale, *Mesoplodon grayi* Haast, is recorded only by skeletal remains. Length to 20 feet.

The Killer Whale or Grampus, *Orca gladiator* Bonn., has from 20 to 26 teeth in each jaw. Length to 20 feet.

The Yellow-sided Dolphin, *Delphinus delphis* Linn., is the common porpoise of fishermen. Length to 8 feet.

The Bottle-nosed Dolphin, *Tursiops tursio* (Fabr.), has been recorded several times. A small specimen of this species was stranded in the Yarra River last year (1932).

INTRODUCED MAMMALS.

Foreign animals introduced into Australia have probably done more to exterminate small native creatures than trapping, hunting, settlement, and all other agencies put together. The European rabbit is responsible for the decrease in numbers, almost to extermination, of Rat-kangaroos, Rabbit-bandicoots, and other native animals whose food it eats; rats, cats, and foxes are also very destructive.

The Dingo, *Canis familiaris dingo* Bulm., has been claimed to be indigenous to Australia, but the general opinion of zoologists is that the dingo and the aboriginal came to the country together.

The Fox, *Vulpes vulpes* (Linn.), was brought to Australia by Victorian sportsmen for fox-hunting. It has spread with alarming rapidity, and is responsible for much havoc amongst native game.

The Domestic Cat, *Felis cattus* Linn., is perhaps the most destructive enemy of native animals, for it climbs trees and preys upon birds and arboreal mammals. In the bush, where it is now unfortunately common, it grows to a large size, and many of the stories of "Tigers" and other strange creatures have their origin in this animal.

The Rabbit, *Oryctolagus cuniculus* (Linn.), and the Hare, *Lepus europaeus* Pallas, are too well known to need more than mention. Both flourish only too well.

The Brown or Norway Rat, *Rattus norvegicus* (Erxl.), lives in sewers and burrows and never far from settlement. It has coarse, spiny fur, short ears, and a tail shorter than head and body.

The European Black Rat, *Rattus rattus* (Linn.), and its grey variety, the Alexandrine Rat, *R. rattus alexandrinus* (Geoff.), have adapted themselves to life in the bush, and are responsible for the extermination of many native rodents. The Black Rat is dark grey or black both above and below; the Alexandrine Rat is usually lighter grey above and white or yellowish-white below. Both have long ears and tails longer than head and body. They climb trees with ease, and sometimes build nests in tree-tops. They are a pest to orchardists, for they eat the growing fruit from the branches, but they can flourish far from cultivated areas. On numerous occasions their numbers have reached plague proportions.

The European House-mouse, *Mus musculus* Linn., is to be found everywhere in Victoria. Often it sweeps the country in swarms, and does enormous damage at these times. It is often called "Field Mouse," but it is the same animal that is found in town houses.

The National Museum, Melbourne, is always pleased to identify, or give advice regarding, any unusual animal, and donations of native fauna are welcomed.

THE HISTORY OF VICTORIA.

An article on this subject contributed by Professor Ernest Scott, Professor of History in the University of Melbourne, appeared in the *Year-Book* for 1916-17, pages 1 to 31.

CHRONOLOGICAL TABLE OF LEADING EVENTS.

The *Year-Book* for 1916-17 contained, on pages 31 to 50, a chronological table of leading events in Victorian history for the years 1770 to 1900 inclusive, and of leading events in Victoria and other history for the years 1901 to 1916 inclusive. The leading events in the fifteen years 1917 to 1931 were given in the volumes relating to those years.

Some of the principal events in Victorian and Australian history during 1932 were as follows :—

1932—17th January	..	Death in Melbourne of Captain Albert Jacka, first Australian to be awarded a V.C. in the Great War.
5th February	..	Bush fires raged in many districts in Victoria. Six men were overtaken by flames at Erica and all perished.
19th March	..	Sydney Harbour Bridge opened.
13th April	..	Hogan Ministry defeated on a vote of the Legislative Assembly.
14th May	..	Legislative Assembly Elections held and Labour Party defeated.
19th May	..	New Ministry, with Sir Stanley Argyle, K.B.E., M.R.C.S., as Premier, assumed office.
10th July	..	Coastal Steamer <i>Casino</i> capsized and sank in Apollo Bay. Ten lives were lost.
26th July	..	Death announced of Sir William McPherson, a former Premier of this State.

CONSTITUTION AND GOVERNMENT.

The Present Constitution.

An article containing full information regarding the Present Constitution of Victoria appeared in the *Year-Book* for 1928-29, pages 9 to 16.

ELECTIONS FOR THE LEGISLATIVE COUNCIL, 1931.

Elections for the Legislative Council. At the triennial elections for the Legislative Council, held on 6th June, 1931, nine seats were contested, eight members being returned unopposed. A statement showing the number of electors on the rolls for each province; also the number and proportion who voted in the provinces where elections were held, appeared in the *Year-Book* for 1930-31, page 7.

ELECTIONS FOR THE LEGISLATIVE ASSEMBLY, 1932.

Elections. Legislative Assembly. At the elections for the Legislative Assembly held on 14th May, 1932, there were contests in 44 of the 65 constituencies, each returning one member. The number of electors on the rolls was 1,055,301—510,809 males and 544,492 females. In contested districts 94·16 per cent. of the electors recorded their votes, the proportion for males being 94·56 per cent. and for females 93·77 per cent.